

Amendments to the Claims:

1. (Currently Amended) A method for performing technology mapping on a design that is not bounded to a particular technology, the method comprising:

mapping the design to the technology and optimizing the design for the technology by ~~repeatedly~~ iteratively:

selecting from the design a candidate sub-network;

identifying at least one replacement sub-network from a storage structure that stores replacement sub-networks that are bound to the technology, wherein at least some of the replacement sub-networks comprises multiple circuit elements; and

determining whether to replace the selected candidate sub-network with the replacement sub-network using at least one cost function;

if determined to replace the selected candidate sub-network, replacing the selected candidate sub-network in the design with the replacement sub-network; and

wherein, during an iteration, a first candidate sub-network is replaced in the design with a first replacement sub-network, and during another iteration, a second candidate sub-network is replaced by a second replacement sub-network, the second candidate sub-network being comprised of at least one but not all circuit elements of the first replacement sub-network.

2. (Original) The method of claim 1, wherein identifying the replacement sub-network comprises:

generating a parameter based on a set of output functions performed by the selected candidate sub-network, wherein the parameter identifies the replacement sub-network.

3. (Original) The method of claim 2 further comprising: using the parameter to retrieve the replacement sub-network from the storage structure.

4. (Original) The method of claim 2, wherein the set of output functions includes only one output function.

5. (Original) The method of claim 2, wherein the set of output functions includes one or more output functions.
6. (Original) The method of claim 1 further comprising:
terminating the repetitions once a stopping criteria is reached.
7. (Previously Presented) The method of claim 6, wherein the design includes a plurality of circuit elements and the sub-networks are formed by circuit elements, the method further comprising:
after terminating the repetitions, traversing the design to identify circuit elements that are not bound to the technology;
for each identified circuit element, attempting to identify a replacement sub-network that is stored in the storage structure; and
if at least one replacement sub-network for an identified circuit element is identified, replacing the circuit element in the design with the identified replacement sub-network.
8. (Original) The method of claim 7, wherein if more than one replacement sub-networks are identified for a circuit element, selecting one of the replacement sub-networks and replacing the circuit element with the selected replacement sub-network.
9. (Original) The method of claim 8, wherein if more than one replacement sub-networks are identified for a circuit element, selecting the replacement sub-network that is better than or as good as the rest of the identified sub-networks.
10. (Original) The method of claim 7, wherein each circuit element performs a function, wherein if no replacement sub-network is identified for an identified circuit element, decomposing the function of the circuit element into a set of functions, and then attempting to identify a set of replacement sub-networks in the storage structure that perform the set of functions.

11. (Original) The method of claim 7, wherein traversing the design to identify circuit elements comprises identifying circuit elements that existed in the design when the design was received.
12. (Previously Presented) The method of claim 7 further comprising:
after traversing the design, repeatedly:
selecting from the design a candidate sub-network,
identifying at least one replacement sub-network from a storage structure that stores replacement sub-networks, and
replacing the selected candidate sub-network in the design with the replacement sub-network.
13. (Currently Amended) The method of claim 1 ~~further comprising:~~
~~before replacing the candidate sub-networks with the replacement sub-networks,~~
~~evaluating whether to replace the selected candidate sub-network with the replacement sub-network,~~
wherein certain candidate sub-networks are replaced by replacement sub-networks based on the ~~evaluation~~ determinations, and
wherein certain candidate sub-networks are not replaced based on the ~~evaluations~~ determinations.
14. (Canceled)
15. (Currently Amended) The method of claim ~~[[14]]~~ 1 wherein the cost function relates to size, timing, or power consumption of a sub-network.
16. (Currently Amended) The method of claim ~~13~~ 1, wherein the ~~evaluating~~ determining comprises:
computing two or more costs for a sub-network; and

combining the two or more costs in a weighted or unweighted fashion into a single cost for the sub-network.

17. (Currently Amended) A computer readable medium that stores a computer program for performing technology mapping on a design that is not bounded to a particular technology, the computer program comprising sets of instructions for:

mapping the design to the technology and optimizing the design for the technology by ~~repeatedly~~ iteratively:

selecting from the design a candidate sub-network;

identifying at least one replacement sub-network from a storage structure that stores replacement sub-networks that are bound to the technology, wherein at least some of the replacement sub-networks comprises multiple circuit elements; and

determining whether to replace the selected candidate sub-network with the replacement sub-network using at least one cost function;

if determined to replace the selected candidate sub-network, replacing the selected candidate sub-network in the design with the replacement sub-network; and

wherein, during an iteration, a first candidate sub-network is replaced in the design with a first replacement sub-network, and during another iteration, a second candidate sub-network is replaced by a second replacement sub-network, the second candidate sub-network being comprised of at least one but not all circuit elements of the first replacement sub-network.

18. (Currently Amended) The computer readable medium of claim 17 ~~further comprising a set of instructions for:~~

~~before replacing the candidate sub-networks with the replacement sub-networks, evaluating whether to replace the selected candidate sub-network with the replacement sub-network,~~

wherein certain candidate sub-networks are replaced by replacement sub-networks based on the ~~evaluation~~ determinations, and

wherein certain candidate sub-networks are not replaced based on the ~~evaluations~~
determinations.

19. (Currently Amended) The computer readable medium of claim 18, wherein the set of instructions for ~~evaluating~~ determining comprises a set of instructions for computing a cost function relating to size, timing, or power consumption of a sub-network.
20. (Currently Amended) The computer readable medium of claim 18, wherein the set of instructions ~~evaluating~~ determining comprises sets of instructions for:
computing two or more costs for a sub-network; and
combining the two or more costs in a weighted or unweighted fashion into a single cost for the sub-network.